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Born

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[54] **MACHINE FOR CUTTING AND REMOVING CORD OR BAND FROM SECURED GOODS**

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[52] **U.S. Cl.** **29/564.3;** 83/100; 83/909

[58] **Field of Search** ..... 29/564.3; 53/381 R, 53/372; 83/100, 909, 924; 30/128

[56] **References Cited**

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[57] **ABSTRACT**

A machine for cutting and removing cord or band from secured goods, having a portal stand to which a conveyer brings the goods secured by cord or band. A cross beam can be vertically adjusted and guided along uprights and suspended from two rope lines which are run over fixed pulleys and connected with a pulley block that is actively connected to a gear brake motor. To one end section of the cross beam is mounted an adjustable cutter unit and to the other an adjustable suction unit. Both units have each one spring-mounted movable feeler plate. To the feeler plate of the cutter unit is mounted a vertically positioned cutter head and to the feeler plate of the suction unit is connected a suction head that removes the cut securing agents.

4 Claims, 4 Drawing Figures

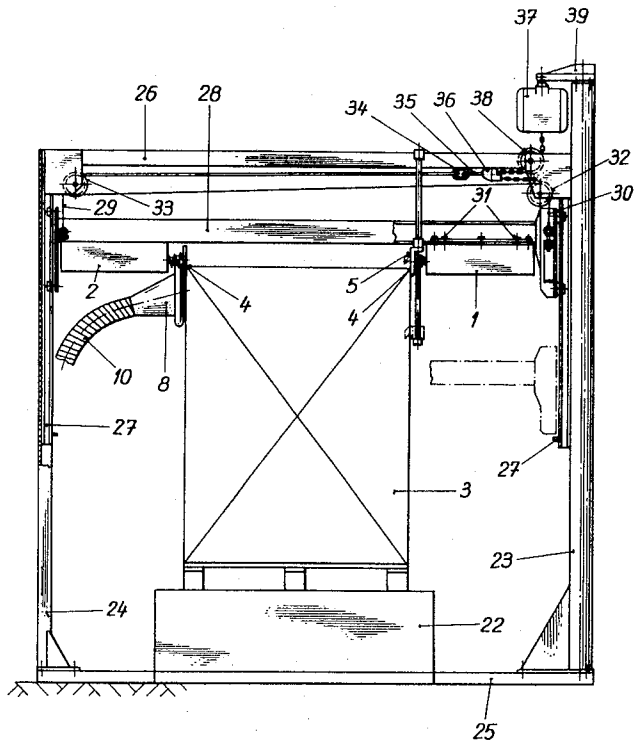


Fig. 1

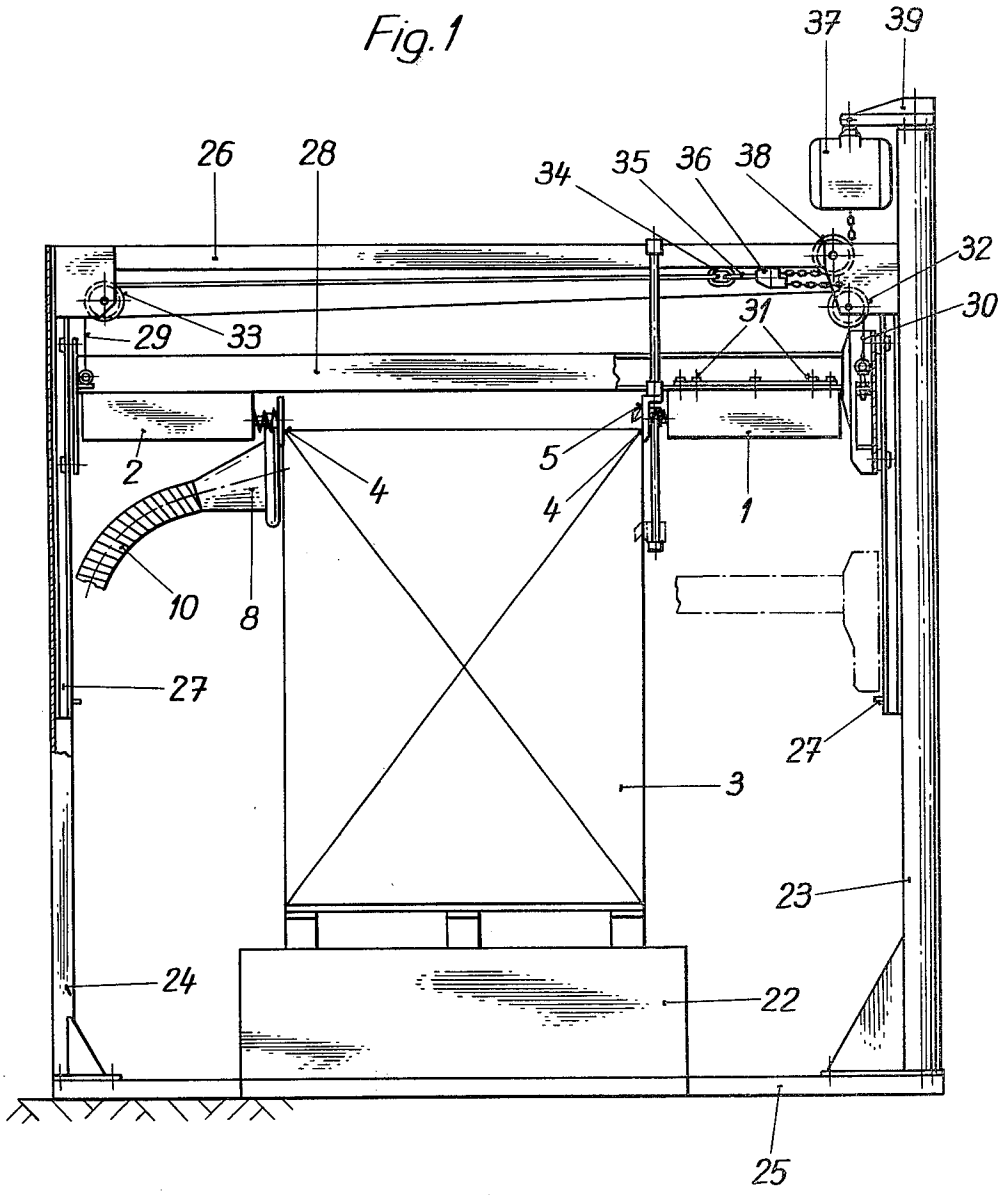


Fig.2

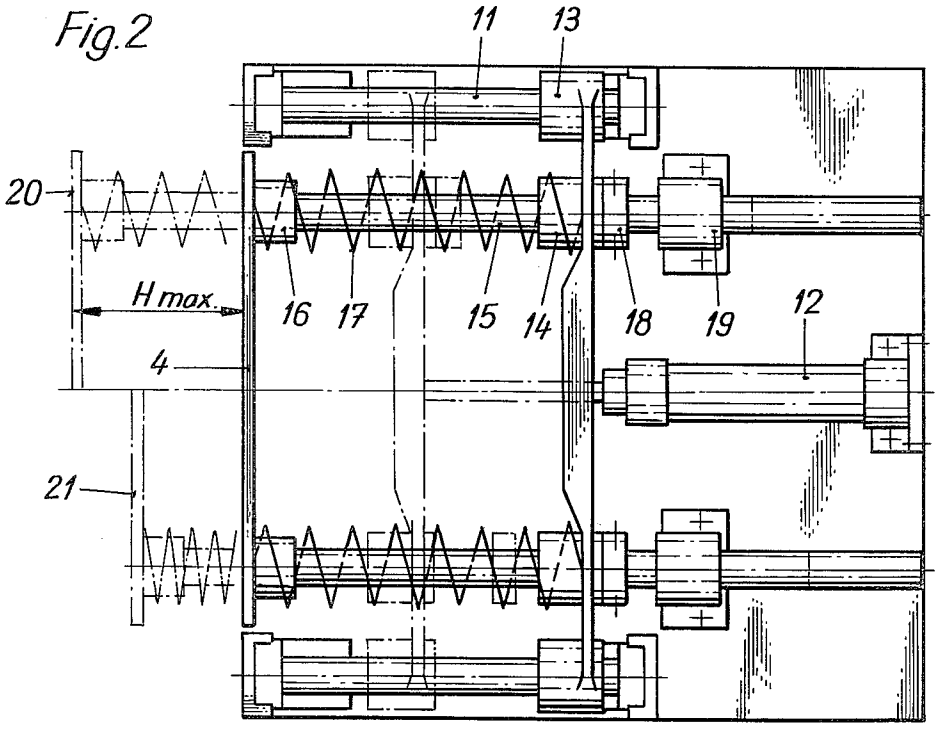


Fig.3

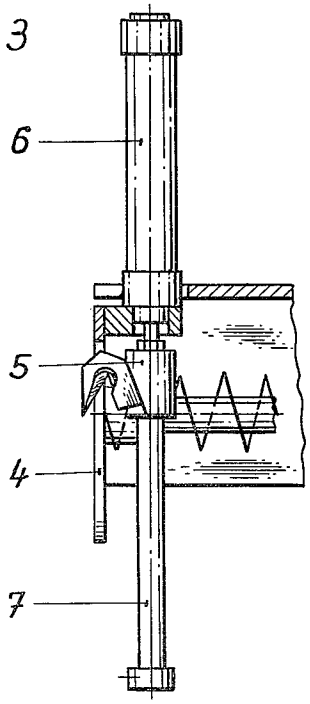
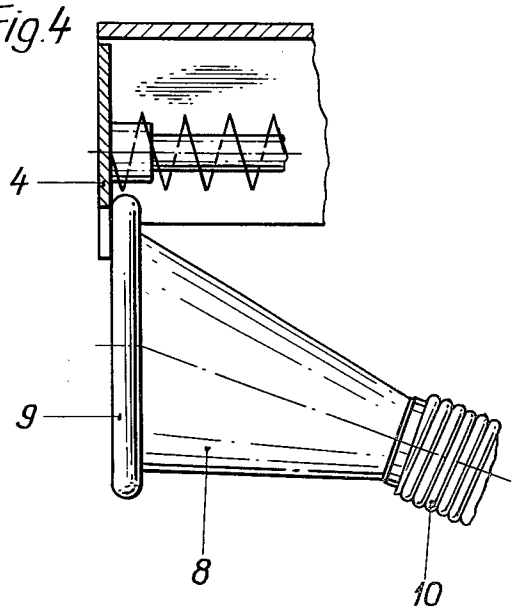


Fig.4



MACHINE FOR CUTTING AND REMOVING CORD OR BAND FROM SECURED GOODS

The invention concerns a machine for cutting and removing cord or band from secured goods, with a portal stand and a conveyer leading through the latter.

According to regulations, the top goods piled on pallets must be held together by means of a binding agent (cord or band) applied in the horizontal plane. The binding agent is removed after the shipping process has been concluded.

We know the rod cutter used by the pallet lift truck driver to cut the cord or band with which the goods are tied together. This is laborious and troublesome work. Also inconveniencing are the cut binding agents and the carrying along of the cutter.

These drawbacks will be eliminated with the machine according to the invention.

The drawings show, as an example, an embodiment of the machine object of the invention.

FIG. **1** is a view of the machine,

FIG. **2** is a plan view of the feeler plate control system,

FIG. **3** shows a feeler plate with a blade actuating system, and

FIG. **4** shows a feeler plate with attached suction head.

The machine presented here includes a portal stand to which a conveyer **22** brings the goods **3** (FIG. **1**) secured by a cord or a band. This portal stand is formed by one bottom cross girder **25**, one top cross girder **26** and two uprights **23**, **24**. One upright **23** is higher and provided on top with a bracket **39** whereto is secured a chain block **37** fitted with a gear brake motor. It serves to effect parallel vertical adjustment of a cross beam **28** provided with roller guides **27** at both uprights **23**, **24**. The cross beam **28** is suspended at one end from a rope line **29** and on the other from a rope line **30**. The rope line **29** is turned around a fixed rope pulley **33** and connected to an eye **34** of a load hook **35** of a block **36** guided horizontally by a pulley **38**. The other rope line **30** is turned around the two fixed pulleys **32** and **33** and also attached to the eye **34**. Pulley block **36** is connected with the chain of chain block **37** and the vertical adjustment of cross beam **28** can be effected by manual control or by automated scanning and made to fit the respective height of the top goods **3** tied up.

To the bottom side of one end section of the cross beam **28** is mounted a cutter unit **1** and, of the other end section, a suction unit **2** in the longitudinal direction of cross beam **28**, by means of detachable clamp connections **31**.

Both units **1**, **2** display each one plate to which two guide rods **11** are attached (FIG. **2**). They serve to guide the adjustable cross girder **13** controlled by means of a lifting drive **12**. In two longitudinal bearings **19** attached to the plate are held two movable push and pull rods **15** which are led, in addition, through one hub **14** each of cross girder **13** with longitudinal bearings. Both rods **15** are secured at their outer end to lugs **16** of a feeler plate **4**. Springs **17** are resting against cross girders **13** and serve to push the feeler plate **4** forward with the desired strength. The foremost position of feeler plate **4** is limited by stops **18**. Feeler plate **4** can be moved to maximum position **20** (H_{max}). Upon contact with the goods **3**, the feeler plate **4** will remain set in position **21**.

Two vertical guide rods **7** (FIG. **3**) are attached to the feeler plate of the cutter unit **1**. These rods hold a blade head **5** made movable by a lifting drive **6**. The blade projects through a slot of feeler plate **4** and minimum by the thickness of the binding agent (cord or band) so that the cord or band can be caught by the cutting edge of the blade.

Onto the feeler plate **4** of the suction unit **2** is installed a funnel-shaped suction head **8** with the suction intake **9** positioned in the area of the cut binding agent (FIG. **4**). Suction head **8** is connected to a suction hose **10** that leads into a vacuum container that acts as a separator and that is connected to a suction blower (not shown here).

I claim:

1. A machine for cutting and removing cord or band extending in a plane and surrounding a number of discrete packages placed on a pallet extending in a place substantially parallel to that cord or band, comprising

a portal stand;

a vertically adjustable horizontal cross beam connected to said portal;

adjusting means for adjusting the vertical position of that cross beam;

conveyor means carrying said pallet through that portal stand;

cutter means for cutting said cord adjustably carried by said cross beam;

a feeler device attached to that cutter means;

biasing means biasing said feeler device toward the center of that cross beam;

a suction device adjustably carried by said cross beam spaced from said cutter means for automatically sucking in and removing said cut pieces of cord or band;

a second feeler device attached to said suction device; and

a second biasing means biasing said second feeler device towards said center of said cross beam.

2. A machine as claimed in claim **1**, comprising

first motor means; and

rope means connected on one end to said motor means and connected on the other end to said horizontal cross beam for vertically adjusting said cross beam.

3. A machine as claimed in claim **1**, comprising

guide means for guiding said cutter means and said suction device towards each other parallel to said cross beam.

4. A machine as claimed in claim **1**, said suction device comprising

a funnel shaped suction head attached to said suction device for sucking in and removing the cut cord or band ends from the machine.

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